

CLAIMS

I claim:

1. An adjuster device for a mouthpiece, the device comprising:
 - 5 - a first stop portion connected to a first bite body; and
 - an actuator connected to the first stop portion to move the first bite body along a restricted path of travel relative to a second bite body having a second stop portion complementary to the first stop portion.
- 10 2. The device, according to claim 1, in which the first stop portion includes:
 - a pair of first blocking members, each first blocking member having a first blocking surface disposed towards a plurality of first front teeth.
- 15 3. The device, according to claim 2, in which:
 - 15 - a generally planar ledge is connected to each of the first blocking surfaces and extends away therefrom, the ledge having a front ledge portion and rear ledge portion, the ledge being disposed generally orthogonal to the first blocking surface.
- 20 4. The device, according to claim 3, in which:
 - a first molar engager surface extends from the front ledge portion to a first block rear portion, the first molar engager surface being complementary to a plurality of first rear molars.
- 25 5. The device, according to claim 3, in which the actuator includes:
 - a pair of blocks, each having a first generally vertical block surface disposed towards each of the first blocking surfaces and spaced apart therefrom to define a first gap therebetween.
- 30 6. The device, according to claim 5, in which each of the blocks further includes:

- an angled block surface, the angled block surface being angled towards the first front teeth;
- a second molar engager surface; and
- a planar surface, the second molar engager surface and the planar surface being parallel to each other, the planar surface being disposed towards the generally planar ledge and spaced apart therefrom to define a second gap therebetween.

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7. The device, according to claim 6, in which:

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- a pair of gap adjusters connects each of the blocks to each of the first blocking members, each of the gaps adjuster being connected to a first frame.

8. The device, according to claim 7, in which each of the gap adjusters

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includes:

- an actuating cylinder rotably mounted on the first frame and having a plurality of pin receiver holes located therein.

9. The device, according to claim 8, in which the gap adjuster further

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includes:

- a support shaft, the support shaft and the actuating cylinder being mounted in respective first and second support blocks, the first and second support blocks being embedded in each of the first blocking members, each of the support blocks having a visible direction indicator located thereon.

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10. The device, according to claim 9, in which:

- a key pin is insertable into one of the pin receiver holes to rotate the actuating cylinder relative to the first frame to move the blocks relative to the first blocking members and in the direction of the visible direction indicators.

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11. The device, according to claim 10, in which:
- the first frame is substantially embedded in the first bite body and extends between each of the first blocking members to a front portion of the first bite body.
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12. The device, according to claim 11, in which:
- a bridge interconnects the first blocking members, the bridge being shaped to lie snugly against the roof of the mouth.
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13. The device, according to claim 12, in which:
- a rearwardly disposed frame portion interconnects the bridge and the first and second support blocks.
14. The device, according to claim 13, in which:
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- the first frame includes first and second molar anchors sized and shaped to engage the first bite body with the first rear molars.
15. The device, according to claim 14, in which:
- the first stop portion is located rearwardly of the first bite body.
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16. The device, according to claim 15, in which:
- the first bite body is a maxillary bite body.
17. Anti-snoring apparatus including a first bite body and a second bite body,
- 25 the apparatus comprising:
- a first stop portion connected to the first bite body;
 - a second stop portion connected to the second bite body, the second stop portion being complementary to the first stop portion, the first and second bite bodies when mounted in a mouth define an air passageway therebetween; and
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- an actuator connected to the first stop portion to move the first bite body along a restricted path of travel relative to the second bite body so as to maintain the air passageway substantially free of obstruction.

18. The apparatus, according to claim 17, in which the first stop portion includes:
- 5 - a pair of first blocking members, each first blocking member having a first blocking surface disposed towards a plurality of first front teeth.
19. The apparatus, according to claim 18, in which:
- 10 - a generally planar ledge is connected to each of the first blocking surfaces and extends away therefrom, the ledge having a front ledge portion and rear ledge portion, the ledge being disposed generally orthogonal to the first blocking surface.
20. The apparatus, according to claim 19, in which:
- 15 - a first molar engager surface extends from the front ledge portion to a first block rear portion, the first molar engager surface being complementary to a plurality of first rear molars.
21. The apparatus, according to claim 20, in which the actuator includes:
- 20 - a pair of blocks, each having a first generally vertical block surface disposed towards each of the first blocking surfaces and spaced apart therefrom to define a first gap therebetween.
22. The apparatus, according to claim 21, in which each of the blocks further includes:
- 25 - an angled block surface, the angled block surface being angled towards the first front teeth;
- a second molar engager surface; and
- 30 - a planar surface, the second molar engager surface and the planar surface being parallel to each other, the planar surface being disposed towards the generally planar ledge and spaced apart therefrom to define a second gap therebetween.
23. The apparatus, according to claim 22, in which:

- a pair of gap adjusters connects each of the blocks to each of the first blocking members, each of the gaps adjuster being connected to a first frame.
- 5 24. The apparatus, according to claim 23, in which each of the gap adjusters includes:
- an actuating cylinder rotably mounted on the first frame and having a plurality of pin receiver holes located therein.
- 10 25. The apparatus, according to claim 24, in which the gap adjuster further includes:
- a support shaft, the support shaft and the actuating cylinder being mounted in respective first and second support blocks, the first and second support blocks being embedded in each of the first blocking
- 15 members, each of the support blocks having a visible direction indicator located thereon.
26. The apparatus, according to claim 25, in which:
- a key pin is insertable into one of the pin receiver holes to rotate the
- 20 actuating cylinder relative to the first frame to move the blocks relative to the first blocking members and in the direction of the visible direction indicators.
27. The apparatus, according to claim 26, in which:
- 25 - the first frame is substantially embedded in the first bite body and extends between each of the first blocking members to a front portion of the first bite body.
28. The apparatus, according to claim 27, in which:
- 30 - a bridge interconnects the first blocking members, the bridge being shaped to lie snugly against the roof of the mouth.

29. The apparatus, according to claim 28, in which:
 - a rearwardly disposed frame portion interconnects the bridge and the first and second support blocks.
- 5 30. The apparatus, according to claim 29, in which:
 - the first frame includes first and second molar anchors sized and shaped to engage the first bite body with the first rear molars.
31. The apparatus, according to claim 30, in which:
 - 10 - the first stop portion is located rearwardly of the first bite body.
32. The apparatus, according to claim 31, in which:
 - the first bite body is a maxillary bite body.
- 15 33. The apparatus, according to claim 17, in which the second stop portion includes:
 - a pair of second blocking members, each second blocking member being interlockable with each of the blocks of the actuator.
- 20 34. The apparatus, according to claim 33, in which each of the second blocking members includes an angled blocking surface complementary to the angled block surface.
35. The apparatus, according to claim 34, in which:
 - 25 - the second bite body includes a second frame substantially embedded therein and extending between each of the second blocking members and a front portion of the second bite body, the second frame having a plurality of molar anchors.
- 30 36. The apparatus, according to claim 35, in which:
 - the second blocking members are frontwardly disposed of the second bite body.

37. The apparatus, according to claim 36, in which:
- the second bite body is a mandibular bite body.
38. The apparatus, according to claim 17, in which:
- 5 - a pair of resilient connector bands releasably connect the first and second bite bodies together.
39. A maxillary mouthpiece comprising:
- a maxillary bite body having a first stop portion connected thereto; and
- 10 - an actuator connected to the first stop portion to move the maxillary bite body along a restricted path of travel relative to a mandibular bite body having a second stop portion complementary to the first stop portion.
40. The mouthpiece, according to claim 39, in which the first stop portion
- 15 includes:
- a pair of blocking members, each blocking member having a blocking surface disposed towards a plurality of maxillary front teeth.
41. The mouthpiece, according to claim 40, in which:
- 20 - a generally planar ledge is connected to each of the blocking surfaces and extends away therefrom, the ledge having a front ledge portion and rear ledge portion, the ledge being disposed generally orthogonal to the blocking surface.
- 25 42. The mouthpiece, according to claim 41, in which:
- a first maxillary molar engager surface extends from the front ledge portion to a first block rear portion, the maxillary molar engager surface being complementary to a plurality of maxillary rear molars.
- 30 43. The mouthpiece, according to claim 39, in which the actuator includes:
- a pair of blocks, each having a generally vertical block surface disposed towards each of the blocking surfaces and spaced apart therefrom to define a gap therebetween.

44. The mouthpiece, according to claim 43, in which each of the blocks further includes:

- an angled block surface, the angled block surface being angled towards the maxillary front teeth;
- 5 - a second maxillary molar engager surface; and
- a planar surface, the second maxillary molar engager surface and the planar surface being parallel to each other, the planar surface being disposed towards the generally planar ledge and spaced apart therefrom to define a second gap therebetween.

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45. The mouthpiece, according to claim 41, in which:

- a pair of gap adjusters connects each of the blocks to each of the blocking members, each of the gap adjuster being connected to a frame.

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46. The mouthpiece, according to claim 42, in which each of the gap adjusters includes:

- an actuating cylinder rotably mounted on the frame and having a plurality of pin receiver holes located therein.

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47. The mouthpiece, according to claim 43, in which the gap adjuster further includes:

- a support shaft, the support shaft and the actuating cylinder being mounted in respective first and second support blocks, the first and second support blocks being embedded in each of the blocking members, each of the support blocks having a visible direction indicator located thereon.

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48. The mouthpiece, according to claim 44, in which:

- 30 - a key pin is insertable into one of the pin receiver holes to rotate the actuating cylinder relative to the frame to move the blocks relative to the blocking members and in the direction of the visible direction indicators.

49. An anti-snoring kit comprising:
- a patient-specific maxillary mouthpiece having an adjuster device, according to claim 1;
 - a patient-specific mandibular mouthpiece complementary to the maxillary mouthpiece; and
 - a patient-specific mouth cast, the mouthpieces being mountable on the mouth cast.
50. The kit, according to claim 47, further including a key pin to actuate the adjuster device.
51. The kit, according to claim 50, further including a pair of resilient connector bands to releasably connect the mouthpieces together.